



U.S. ENVIRONMENTAL PROTECTION AGENCY
 Office of Pesticide Programs
 Biopesticides and Pollution Prevention Division (7511P)
 1200 Pennsylvania Ave., N.W.
 Washington, D.C. 20460

EPA Reg. Number:

73049-528

Date of Issuance:

4/20/2022

NOTICE OF PESTICIDE:

Registration
 Reregistration
 (under FIFRA, as amended)

Term of Issuance:

Conditional

Name of Pesticide Product:

Sympatico WG Biological
 Insecticide Wettable Granule

Name and Address of Registrant (include ZIP Code):

Valent BioSciences LLC
 1910 Innovation Way, Suite 100
 Libertyville, IL 60048

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Biopesticides and Pollution Prevention Division prior to use of the label in commerce. In any correspondence on this product, always refer to the above EPA Registration Number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA or the Act).

Registration is in no way to be construed as an endorsement or recommendation of this product by the U.S. Environmental Protection Agency (EPA). In order to protect health and the environment, the Administrator, on his or her motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under the Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A). You must comply with the following conditions:

1. Submit and/or cite all data required for registration or registration review of your product when the EPA requires all registrants of similar products to submit such data.

Signature of Approving Official:

DANIEL
SCHOEFF
 Digitally signed by DANIEL SCHOEFF
 Date: 2022.04.20 13:23:45 -04'00'

Daniel Schoeff, Risk Manager
 Microbial Pesticides Branch
 Biopesticides and Pollution Prevention Division (7511M)
 Office of Pesticide Programs

Date:

4/20/2022

2. Comply with the data requirements described in the Data Call-in (DCI) identified below:

- a. Chemical Name GDCI- *Bacillus thuringiensis* subsp. *aizawai* (Bta) strain ABTS-1857
- b. Chemical Name GDCI- *Bacillus thuringiensis* subsp. *kurstaki* strain VBTS-2546

You must comply with all of the data requirements within the established deadlines. If you have questions about the Generic DCI listed above, you may contact the Re-Evaluation Team Leader:

<https://www.epa.gov/pesticide-contacts/contacts-office-pesticide-programs-biopesticides-and-pollution-prevention>.

3. Submit storage stability and corrosion characteristics (Guidelines 830.6317 and 830.6320) data as these data requirements are not satisfied. A one-year study is required to satisfy these data requirements. You have 18 months from the date of this registration to provide these data to the EPA.
4. Make the following labeling change before you release this product for shipment:
 - Revise the EPA Registration Number to read, “EPA Reg. No. 73049-528.”
5. Submit one (1) copy of the final printed labeling for the record before you release this product for shipment.

Should you wish to add/retain a reference to your company’s website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the EPA. If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the EPA find or if it is brought to our attention that a website contains statements or claims substantially differing from statements or claims made in connection with obtaining a FIFRA section 3 registration, the website will be referred to the EPA’s Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these conditions. If you fail to satisfy these data requirements, the EPA will consider appropriate regulatory action including, among other things, cancellation under FIFRA section 6(e). A stamped copy of the labeling is enclosed for your records. Please also note that the record for this product currently contains the following acceptable Confidential Statement of Formula (CSF):

- Basic CSF dated 04/04/2022

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EPA Reg. No. 73049-528
Action Case No. 00322291

If you have any questions, please contact Jennifer Odom by phone at (202) 566-1536 or via email at odom.jennifer@epa.gov.

Sincerely,

DANIEL
SCHOEFF

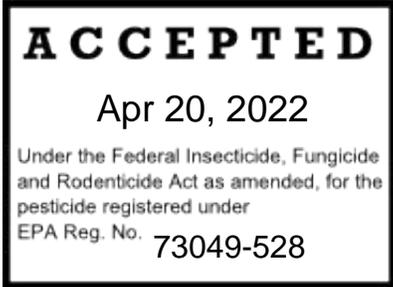
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DANIEL SCHOEFF
Date: 2022.04.20
13:23:04 -04'00'

Daniel Schoeff, Risk Manager
Microbial Pesticides Branch
Biopesticides and Pollution
Prevention Division (7511M)
Office of Pesticide Programs

Enclosures (2): Stamped Label
EPA Science Review Dated March 23, 2022 (and Associated Data Evaluation Record)

[Text in brackets [] indicates optional language or language intended for explanatory purposes to facilitate label review. Thus, this language will often not appear on final printed labeling. Also, this page is present (page 1) to delineate sublabels and will not appear on the final printed labeling.]

MASTER LABEL
SYMPATICO® WG
BIOLOGICAL INSECTICIDE
WETTABLE GRANULE



[Alternate Brand Name: Syncat, Kuraiza]

 For Organic Production

SYMPATICO WG BIOLOGICAL INSECTICIDE is an effective product for control of Lepidoptera pests in agricultural production systems.

Active Ingredient:

<i>Bacillus thuringiensis</i> subsp. <i>kurstaki</i> strain VBTS-2546 fermentation solids, spores, and insecticidal toxins*	35.75%
<i>Bacillus thuringiensis</i> subsp. <i>aizawai</i> strain ABTS-1857 fermentation solids, spores, and insecticidal toxins*	19.25%
Other Ingredients	45%
Total	100%

*Potency: 32,000 Cabbage Looper Units (CLU) per mg (14.5 billion CLU per pound)

The percent active ingredient does not indicate product performance and potency measurements are not federally standardized.

KEEP OUT OF REACH OF CHILDREN
CAUTION

[see side/back panel for First Aid]

Manufactured by :
Valent BioSciences LLC
1910 Innovation Way, Suite 100
Libertyville, IL 60048

EPA Registration No.
EPA Est. No.

Batch Code: _____

Net Content:

FIRST AID	
If in eyes	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If on skin or clothing	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for treatment advice.
HOTLINE NUMBER	
<p>Have the product container or label with you when calling a poison control center or doctor or going for treatment. For medical emergencies or transport emergencies call 1-800-892-0099 (24 hours). For non-emergency information on this product, contact Biobest at 1-855-224-6237.</p>	

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION**

Harmful if inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid breathing dust or spray mist. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash before reuse.

Personal Protective Equipment (PPE):

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

Mixers/loaders and applicators must wear a minimum of a NIOSH-approved particulate filtering facepiece respirator with any R, or P filter; OR a NIOSH approved elastomeric particulate respirator with any R, or P filter; OR a NIOSH-approved powered air- purifying respirator with an HE filter. Repeated exposures to high concentrations of microbial proteins can cause allergic sensitization.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls:

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.607(d) and

(e)]the handler PPE requirements may be reduced or modified as specified in the WPS.

IMPORTANT: When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for “applicators and other handlers” and have such PPE immediately available for use in an emergency, such as a spill or equipment break-down.

User Safety Recommendations

- Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- User should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

For terrestrial uses: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

This product must not be applied aerially within ¼ mile of any habitats of endangered or threatened lepidoptera. No manual application can be made within 300 feet of any threatened or endangered lepidoptera.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry interval. The requirements in this box apply to uses of this product that are covered by the Worker Protection Standard.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Waterproof gloves
Shoes plus socks
- Protective eyewear

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Keep unprotected persons out of the treated areas until sprays have dried.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Store this product in its original container in a cool, dry place, away from sunlight and inaccessible to children and pets.

Pesticide Disposal: To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

Container Handling: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment by shaking and tapping sides and bottom to loosen clinging particles. Offer for recycling, if available, or dispose of empty bag in a sanitary landfill or by incineration. Do not burn, unless allowed by State and local ordinances.

DIRECTIONS FOR USE

See Chemigation section for chemigation use directions.

Days to Harvest: There are no restrictions on applying SYMPATICO® WG BIOLOGICAL INSECTICIDE WETTABLE GRANULE (hereafter referred to as Sympatico WG) up to the time of harvest. 0-day Preharvest Interval (PHI).

Sites: Sympatico WG may be used for any labeled pest and crop in both field and greenhouse as well as in self-contained, closed systems.

Sympatico WG is an insecticide for use against listed caterpillars (larvae) of lepidopterous insects. Close scouting and early attention to infestations is highly recommended. Larvae must eat deposits of Sympatico WG to be affected. Always follow these directions:

- Treat when larvae are young (early instars) before the crop is damaged.
- Larvae must be actively feeding on treated, exposed plant surfaces to ingest the product.
- About 1 hour after ingesting a lethal dose of Sympatico WG, larvae will stop feeding and die within a few hours to 3 days post ingestion. Mortality rates will depend on: lepidopteran species, larval size/age (instar) and dose consumed. Following ingestion, larvae will become sluggish, discolor, then shrivel, turn black and die. Smaller larvae die more quickly.

- Thorough spray coverage is needed to provide a uniform deposit of Sympatico WG at the site of larval feeding. Use overhead and drop nozzles to obtain good spray coverage on both sides of the foliage. Use sufficient spray volume to ensure uniform deposition on all plant surfaces.
- Under heavy pest population pressure, use the higher label rates, shorten the spray interval, and/or raise spray volume to improve spray coverage.
- Repeat applications at an interval sufficient to maintain control, usually 3 to 14 days depending on plant growth rate, moth activity, rainfall after treating, and other factors. If attempting to control a pest with a single spray, make the treatment when egg hatch is essentially complete, but before crop damage occurs.
- A spreader-sticker which has been approved for use on growing and harvested crops should be added for hard-to-wet crops such as cabbage, or to improve weather-fastness of the spray deposits. Use of a nonionic surfactant or oil-based sticker can improve coverage and adherence to foliage.
- Sympatico WG may be tank mixed with other labeled insecticides to enhance control. Use of the resulting tank mix must be in accordance with the more restrictive label limitations and precautions. No dose rates should be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing. Before tank mixing Sympatico WG with other labeled products, including spreader stickers, check for tank mix compatibility.
- Maintain tank pH below 8.5. Do NOT apply as a tank mix with alkaline products, such as lime sulfur, or apply alkaline products within 3 days after Sympatico WG application.
- Sympatico WG can easily be incorporated in IPM programs in combination with beneficial insects and mites. Check with your supplier of beneficials for best choice and latest use directions.

Sympatico WG may be applied with conventional ground or aerial equipment, including low volume application equipment such as cold foggers, with quantities of water sufficient to provide uniform coverage of infested plant parts. The volume of water needed per acre will depend on crop development, relative humidity, spray equipment, and local experience. Usually, selection of moderate to high spray volume will provide the best results in most equipment. For optimal results, use at least 20 gallons of water per acre for ground application. For aerial application use at least 3 gallons of water per acre; exception being arid areas, where 5 to 10 gallons are required. Add water to the mix tank and provide moderate agitation. While agitating, add the required amount of Sympatico WG. Continue agitation, and add other spray materials, if any. Add remaining water, if any, and agitate until fully mixed. Maintain the suspension with moderate agitation while loading and spraying. Do not mix more Sympatico WG than can be used in a 3-day period.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all of these factors when making decisions.

CHEMIGATION USE DIRECTIONS

Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move and boom irrigation systems. Do not apply this product through any other type of irrigation system. Do not connect an irrigation system (including greenhouse systems) used for pesticide applications to a public water system.

Crop injury, lack of effectiveness, or illegal residues in the crop can result from non-uniform distribution

of treated water. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise. Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water.

Injection Slurry Preparation

First prepare a suspension of Sympatico WG in a mix tank. Fill tank with $\frac{1}{2}$ to $\frac{3}{4}$ the desired amount of water. Start mechanical or hydraulic agitation. Add the required amount of Sympatico WG, and then the remaining volume of water. Then set the sprinkler to deliver a minimum of 0.1 to 0.3 inch of water per acre. Start sprinkler and uniformly inject the suspension of Sympatico WG into the irrigation water line so as to deliver the desired rate per acre. The suspension of Sympatico WG should be injected with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing. Any questions on calibration should be directed to your State Extension Service Specialists, to equipment manufacturers or other experts.

NOTE: When treatment with Sympatico WG has been completed, further field irrigation over the treated area should be avoided for 24 to 48 hours to prevent washing the material off the crop.

GENERAL PRECAUTIONS FOR APPLICATIONS THROUGH SPRINKLER IRRIGATION SYSTEMS

Maintain continuous agitation in the mix tank during mixing and application to ensure a uniform suspension.

Greater accuracy in calibration and distribution will be achieved by injecting a larger volume for a more dilute solution per unit time.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment, system connections or fittings leak, nozzles do not provide uniform distribution or lines containing the product must be dismantled and drained.

Pests controlled by Sympatico WG

Common name	Scientific name
Achema Sphinx Moth (Hornworm)	<i>Eumorpha achemon</i>
Alfalfa Caterpillar	<i>Colias eurytheme</i>
Almond Moth	<i>Caudra cautella</i>
Alfalfa Looper	<i>Autographa californica</i>
Amorbia Moth	<i>Amorbia humerosana</i>
Armyworm	<i>Spodoptera spp., e.g. exigua, frugiperda, littoralis, Pseudaletia unipuncta</i>
Artichoke plume moth	<i>Platyptilia carduidactyla</i>
Azalea Caterpillar	<i>Datana major</i>
Bagworm	<i>Thyridopteryx ephemeraeformis</i>
Banana Moth	<i>Hypercompe scribonia</i>
Banana Skipper	<i>Erionota thrax</i>
Bertha Armyworm	<i>Mamestra configurata</i>
Blackheaded Budworm	<i>Acleris gloverana</i>
Blackheaded Fireworm	<i>Rhopobata naevana</i>
Bluegrass sod webworm	<i>Parapediasis teterella</i>
Box Tree Moth	<i>Cydalima perspectalis</i>
Cabbage Moth	<i>Mamestra brassicae</i>
California Oakworm	<i>Phryganidia californica</i>
Cabbage Looper	<i>Trichoplusia ni</i>
Cankerworm	<i>Paleacrita merricata</i>
Cherry Fruitworm	<i>Grapholita packardi</i>
China Mark Moth	<i>Nymphula stagnata</i>
Citrus Cutworm	<i>Xylomyges curialis</i>
Citrus Leafminer	<i>Phyllocnistis citrella</i>
Codling Moth	<i>Cydia pomonella</i>
Corn earworm	<i>Helicoverpa zea</i>
Cotton Bollworm	<i>Helicoverpa armigera</i>
Cranberry Fruitworm	<i>Acrobasis vaccinii</i>
Cranberry girdler	<i>Chrysoteuchia topiaria</i>
Cross-striped Cabbageworm	<i>Evergestis rimosalis</i>
Cutworm	<i>Various Noctuid species, e.g. Agrotis ipsilon</i>
Diamondback Moth	<i>Plutella xylostella</i>
Douglas Fir Tussock Moth	<i>Orgyia pseudotsugata</i>
Ello Moth (Hornworm)	<i>Erinnyis ello</i>
Elm Spanworm	<i>Ennomos subsignaria</i>
Eurasian Hemp Borer	<i>Grapholita delineana</i>
European Corn Borer	<i>Ostrinia nubilalis</i>
European Grapevine Moth	<i>Lobesia botrana</i>
European Pepper Moth	<i>Duponchelia fovealis</i>
European Skipper (Essex Skipper)	<i>Thymelicus lineola</i>
Fall Webworm	<i>Melissopus latiferreanus</i>
Filbert Leafroller	<i>Archips rosanus</i>
Fruit-tree Leafroller	<i>Archips argyrospilia</i>
Fruit-tree Tortix	<i>Pandemis spp.</i>
Grape Berry Moth	<i>Paralobesia viteana</i>
Grape Leafroller	<i>Platynota stultana</i>
Grape Leaffolder	<i>Desmia funeralis</i>

Common name	Scientific name
Grapeleaf Skeletonizer (ground only)	<i>Harrisina americana</i>
Green Cloverworm	<i>Plathypena scabra</i>
Greenstriped Mapleworm	<i>Dryocampa rubicunda</i>
Gummosos-Batrachedra Comosae (Hodges)	
Gypsy Moth	<i>Lymantria dispar</i>
Headworm	<i>Helicoverpa zea</i>
Head Moth	
Hemlock Looper	<i>Lambdina fiscellaria</i>
Hornworm	<i>Manduca spp. e.g. M. sexta, M. quinquemaculata</i>
Imported Cabbageworm	<i>Pieris rapae</i>
Indian Meal Moth	<i>Plodia interpunctella</i>
Io Moth	<i>Automeris io</i>
Jack Pine Budworm	<i>Choristoneura pinus</i>
Leafroller	<i>Ptycholoma peritana</i>
Light brown apple moth	<i>Epiphyas postvittana</i>
Looper	<i>Various Noctuidae, e.g. Trichoplusia ni, Autographa and Chrysodeixis spp</i>
Melonworm	<i>Diaphania hyalinata</i>
Mimosa Webworm	<i>Homadaula anisocentra</i>
Navel Orange Worm	<i>Amyelois transitella</i>
Obliquebanded Leafroller	<i>Choristoneura rosaceana</i>
Oleander Moth	<i>Syntomeida epilais</i>
Omnivorous Leafroller	<i>Playnota stultana</i>
Omnivorous Looper	<i>Sabulodes aegrotata</i>
Orangedog	<i>Papilio cresphontes</i>
Orange Tortrix	<i>Argyrotaenia citrana; A. franciscana</i>
Oriental Fruit Moth	<i>Grapholita molesta</i>
Peach twig borer	<i>Anarsia lineatella</i>
Pine Butterfly	<i>Neophasia menapia</i>
Pinworm	<i>Keiferia lycopersicella</i>
Podworm	<i>Helicoverpa zea</i>
Raisin Moth	<i>Cadra figulilella</i>
Redbanded Leafroller	<i>Argyrotaenia velutinana</i>
Redhumped Caterpillar	<i>Schizura concinna</i>
Rindworm complex	<i>Various leps.</i>
Saddleback Caterpillar	<i>Sibine stimulea</i>
Saddle Prominent Caterpillar	<i>Heterocampa guttivitta</i>
Saltmarsh Caterpillar	<i>Estigmene acrea</i>
Sod Webworm	<i>Crambus spp.</i>
Southern cornstalk borer	<i>Diatraea crambidoides</i>
Soybean Looper	<i>Pseudoplusia includens, Chrysodeixis includens</i>
Spanworm	<i>Ennomos subsignaria; Itame sulphurea</i>
Sparganothis fruitworm	<i>Sparganothis surfuneana</i>
Spring and Fall Cankerworm	<i>Paleacrita vernata and Alsophila pometaria</i>
Spruce budworm	<i>Choristoneura fumiferana</i>
Sugarcane borer	<i>Diatraea saccharalis</i>
Tent Caterpillar	<i>Various Lasiocampidae</i>

Common name	Scientific name
Thecla-Thecla Basilides (Geyr)	<i>Thecla basilides</i>
Tobacco Budworm	<i>Heliothis virescens</i> ; <i>Chloridea virescens</i>
Tobacco Hornworm	<i>Manduca sexta</i>
Tobacco Moth	<i>Ephestia elutella</i>
Tomato Fruitworm	<i>Helicoverpa zea</i>
Tomato Hornworm	<i>Manduca quinquemaculata</i>
Tomato Looper	<i>Chrysodeixis calchites</i>
Tomato pinworm	<i>Keiferia lycopersicella</i>
Tufted Apple Budmoth	<i>Platynota idaeusalis</i>
Twig Borer	<i>Anarsia lineatella</i>
Variiegated Cutworm	<i>Peridroma saucia</i>
Variiegated Leafroller	<i>Platynota flavedana</i>
Velvetbean Caterpillar	<i>Anticarsia gemmatalis</i>
Walnut Caterpillar	<i>Datana integerrima</i>
Webworm	<i>Hyphantria cunea</i>
Western Tussock Moth	<i>Orgyia vetusta</i>

VOLUMES OF APPLICATION

Method of Application	Volume of Water
Spray ground application	>20 gal water per acre Flowers, bedding plants and ornamentals: For best results, use a ground applicator, a minimum of 50 gallons total mix per acre, 50-100 psi and 3-7 nozzles per bed
Spray aerial application	For aerial application use at least 3 gallons of water per acre; exception being arid areas, where 5 to 10 gallons are required
Chemigation-sprinkler	0.1 to 0.3 inch of water per acre

APPLICATION RATE

GREENHOUSE/SHADEHOUSE AND OUTDOOR NURSERY	Application rate (pounds/acre)
<p>Vegetables, root and tuber (Crop Group 1)[*] Including: arracacha; arrowroot; Chinese artichoke; Jerusalem artichoke; garden beet; sugar beet; burdock, edible; canna, edible; carrot; cassava, bitter and sweet; celeriac (celery root); chayote (root); turnip-rooted chervil; chicory; chufa; dasheen (taro); ginger; ginseng; horseradish; leren; turnip-rooted parsley; parsnip; potato; radish; oriental radish (daikon); rutabaga; salsify (oyster plant); salsify, black; salsify, Spanish; skirret; sweet potato; tanier (cocoyam); turmeric; turnip; yam bean; true yam.</p>	0.5-2.0
<p>Vegetable, bulb (Crop Group 3-07)[*] Including: Chive, fresh leaves; Chinese chive, fresh leaves; daylily, bulb; elegans hosta; fritillaria, bulb; fritillaria, leaves; garlic, bulb; great-headed garlic, bulb; serpent garlic, bulb; kurrat; lady's leek; leek; wild leek; lily, bulb; Beltsville bunching onion; onion, bulb; Chinese onion, bulb; onion, fresh; green onion; onion, macrostem; pearl onion; potato onion, bulb; tree onion, tops; Welsh onion, tops; shallot, bulb; shallot, fresh leaves; cultivars, variety, and/or hybrids of these.</p>	0.5-2.0 Use 1-2 lb for control of <i>Helicoverpa</i> . spp.
<p>Vegetable, leafy, except brassica (Crop Group 4)[*] Including: Amaranth (Chinese spinach); arugula (roquette); cardoon; celery; Chinese celery; celtuce; chervil; chrysanthemum, edible-leaved; chrysanthemum, garland; corn salad; garden cress; upland cress; dandelion; dock (sorrel); endive (escarole); Florence fennel; lettuce, head and leaf; orach; parsley; garden purslane; winter purslane; radicchio (red chicory); rhubarb; New Zealand spinach; vine spinach; Swiss chard.</p>	0.5-2.0 Use higher rates for control of <i>Heliothis</i> spp.
<p>Vegetable, brassica leafy (Crop Group 5)[*] Including: Broccoli; Chinese broccoli (gai lon); broccoli raab (rapini); Brussels sprouts; cabbage; Chinese cabbage (bok choy); Chinese cabbage (napa), Chinese mustard (gai choy); cauliflower; cavalo broccoli; collards; kale; kohlrabi; mizuna; mustard greens; mustard spinach; rape greens.</p>	0.5-2.0 Use 0.5 to 1.5 lb/ Acre for looper control and 1-2 lb/ Acre for <i>Heliothis</i> spp. control depending on larval stage and infestation levels. Use surfactants for hard to wet crops.

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GREENHOUSE/SHADEHOUSE AND OUTDOOR NURSERY	Application rate (pounds/acre)
<p>Vegetable, legume (succulent or dried) (Crop Group 6)[*] Including: Bean, (<i>Lupinus</i>) (includes grain lupin, sweet lupin, white lupin, and white sweet lupin); bean (<i>Phaseolus</i>) (includes field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean); bean (<i>Vigna</i>) (includes adzuki bean, asparagus bean, blackeyed bean, catjang, Chinese longbean, cowpea, crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, yardlog bean); broad bean (fava); chickpea (garbanzo); guar; jackbean; lablab bean (hyacinth bean); lentil; pea (<i>Pisum</i>) includes dwarf pea, edible-podded pea, English pea, field pea, garden pea, green pea, snow pea, sugar snap pea); pigeon pea; soybean; soybean (immature seed); sword bean.</p>	<p>0.5-2.0</p> <p>Monitor insects and apply at more frequent intervals (3-5 days) for heavy populations to maintain control.</p>
<p>Vegetable, fruiting (Crop Group 8-10)[*] Including: African eggplant; bush tomato; bell pepper; cocona; currant tomato; eggplant; garden huckleberry; goji berry; groundcherry; martynia; naranjilla; okra; pea eggplant; pepino; nonbell pepper; roselle; scarlet eggplant; sunberry; tomatillo; tomato; tree tomato; cultivars, varieties, and/or hybrids of these.</p>	<p>0.5-2.0</p> <p>Use 1-2 lb/Acre for control of heavy populations or overlapping generations of <i>Spodoptera</i> spp. Scout tomato fields and apply when insects are hatching or are small.</p>
<p>Vegetable, cucurbit (Crop Group 9)[*] Including: Chayote (fruit); Chayote waxgourd (Chinese preserving melon); citron melon; cucumber; gherkin; gourd, edible (includes hyotan, cucuzza, hechima, Chinese okra); <i>Momordica</i> spp (includes balsam apple, balsam pear, bitter melon, Chinese cucumber); muskmelon (includes true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon and snake melon); pumpkin; summer squash (includes crookneck squash, scallop squash, straight neck squash, vegetable marrow, zucchini); winter squash (includes butternut squash, calabaza, hubbard squash, acorn squash, spaghetti squash); watermelon.</p>	<p>0.5-2.0</p> <p>Use 1-2 lb/Acre for control of <i>Spodoptera</i> spp.</p>

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GREENHOUSE/SHADEHOUSE AND OUTDOOR NURSERY	Application rate (pounds/acre)
<p>Berry and small fruit group (Crop Group 13-07)[*] Including: Amur river grape; aronia berry; bayberry; bearberry; bilberry; blackberry (including Andean blackberry, arctic blackberry, bingleberry, black satin berry, boysenberry, brombeere, California blackberry, Chesterberry, Cherokee blackberry, Cheyenne blackberry, common blackberry, coryberry, darrowberry, dewberry, Dirksen thornless berry, evergreen blackberry, Himalaya berry, hullberry, lavacabery, loganberry, lowberry, Lucretiaberry, mammoth blackberry, marionberry, mora, mures deronce, nectaberry, Northern dewberry, olallieberry, Oregon evergreen berry, phenomenalberry, rangeberry, ravenberry, rossberry, Shawnee blackberry, Southern dewberry, tayberry, youngberry, zarzamora, and cultivars, varieties and/or hybrid of these); highbush blueberry; lowbush blueberry; buffalo currant; buffaloberry; che; Chilean guava; chokeberry; cloudberry; highbush cranberry**; cranberry**;</p>	<p>0.5-2.0</p> <p>For armyworm (<i>Spodoptera</i> spp.) and cutworm (e.g. <i>Agrotis ipsilon</i>), use the higher rate range. Ensure good coverage for optimal control</p>

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GREENHOUSE/SHADEHOUSE AND OUTDOOR NURSERY	Application rate (pounds/acre)
<p>Herb Group (Crop Group 25)[*] Including Agrimony, fresh leaves; Amla, fresh leaves; Angelica, fresh leaves; dahurian Angelica, fresh leaves; Applemint, fresh leaves; Avarum, fresh leaves; Balloon pea, fresh leaves; Balm, fresh leaves; Barrenwort, fresh leaves; Basil, fresh leaves; American Basil, fresh leaves; Greek Basil, fresh leaves; holy Basil, fresh leaves; lemon Basil, fresh leaves; Russian Basil, fresh leaves; Bay, fresh leaves; Bearberry, fresh leaves; Bison grass, fresh leaves; Blue mallow, fresh leaves; Boneset, fresh leaves; Borage, fresh leaves; Indian Borage fresh leaves; Burnet, fresh leaves; salad Burnet, fresh leaves; Butterbur, fresh leaves; Calamint, fresh leaves; large flowered Calamint, fresh leaves; lesser Calamint, fresh leaves; Calendula, fresh leaves; Pill bearing spurge, fresh leaves; Pipsissewa, fresh leaves; common Plantain, fresh leaves; Rooibos, fresh leaves; Rose, fresh leaves; Rosemary, fresh leaves; Sage, fresh leaves; Greek Sage, fresh leaves; Spanish Sage, fresh leaves; white Sage, fresh leaves; summer Savory, fresh leaves; Winter Savory, fresh leaves; Senna, fresh leaves; Siberian fir, fresh leaves; Skullcap, fresh leaves; Small flower willow head, fresh leaves; Sorrel, fresh leaves; French Sorrel, fresh leaves; garden Sorrel, fresh leaves; Southernwood, fresh leaves; Spearmint, fresh leaves; Scotch Spearmint, fresh leaves; Spilanthes, fresh leaves; Spotted beebalm, fresh leaves; St. John's Wort, fresh leaves; Stevia, fresh leaves; Stoneroot, fresh leaves; Swamp leaf, fresh leaves; Tansy, fresh leaves; Tarragon, fresh leaves; Thuja, fresh leaves; Thyme, fresh leaves; creeping Thyme, fresh leaves; lemon Thyme, fresh leaves; mastic Thyme, fresh leaves; Chinese Toon, fresh leaves; Toothed clubmoss, fresh leaves; Trailing arbutus, fresh leaves; Vasaka, fresh leaves; blue Verbena, fresh leaves; Veronica, fresh leaves; Violet, fresh leaves; Watermint**, fresh leaves; Waterpepper**, fresh leaves; Wild bergamot, fresh leaves; Wintergreen, fresh leaves; Wood betony, fresh leaves; Woodruff, fresh leaves; Wormwood, fresh leaves; Roman Wormwood, fresh leaves; Yarrow, fresh leaves; Yellow gentian, fresh leaves; Yerba santa, fresh leaves; Yomogi, fresh leaves; Cultivars,</p>	<p>0.5-2.0</p> <p>Use 1-2 lb for control of Spodoptera spp.</p>

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GREENHOUSE/SHADEHOUSE AND OUTDOOR NURSERY	Application rate (pounds/acre)
varieties, and hybrids of these commodities.	
<p>Spice Group (Crop Group 26)[*] Including Ajowan, seed; Alder buckhorn; Allspice; Ambrette, seed; Amla, seed; Angelica, seed; Angostura, bark; Anise pepper; Anise, seed; Anise, star; Annatto, seed; Asafoetida; Ashwagandha, fruit; Autumn crocus; Peruvian Balsam, Barberry, bark; Batavia-cassia, bark; Batavia-cassia, fruit; Belleric myrobalan; Betel vine; Birch, bark; Bisnaga, seed; Bitterwood; Black bread weed; Bloodroot; Blue mallee; Blushwood, seed; Boldo, leaf; Buchu; Calamus root; Candlebush; Canella, bark; Caper buds; Caper spurge, seed; black Caraway; Caraway, fruit; black Cardamom; Ethiopian Cardamom; green Cardamom; Napal Cardamom; Cardamom-amomum; Cascara sagrada; Cassia, bark; Chinese Cassia, bark; Chinese Cassia; Cassia, fruit; Cat's claw, bark; Catechu, bark; Celery, seed; Chaste tree, berry; Chaste tree, Chinese, roots; Chervil, seed; Chinese hawthorn; Chinese nutmeg tree; Chinese wineberry, fruit; Chinese-pepper; Cinnamon, bark; Cinnamon, fruit; Saigon Cinnamon, bark; Saigon Cinnamon, fruit; Clove buds; Clusterleaf; Comfrey; Copaiba; Coptis; Coriander, fruit; Coriander, seed; Cotton, bark; Crampbark; Cubeb, seed; Culantro, seed; Culvers root; Cumin; black Cumin; Dill, seed; Dorrigo pepper, berry; Dorrigo pepper, leaf; Dragon blood; Echinacea, seed; Epimedium; Eucalyptus; Eucommia, bark; European beech; Felty germander; Fennel flower; common Fennel, fruit; common Fennel, seed; Florence Fennel, fruit; Florence Fennel, seed; Fenugreek, seed; Fingerroot; Flame lily; Frankincense; Indian Frankincense, Fringetree, bark; Galbanum, resin; Gambooge; Grains of paradise; Grains of Selim; Guaiac; Guarana; Guggul; Gum Arabic; Gum ghatti; Gum karaya; Gum tragacanth; black Haw; Honewort, seed; Imperatoria; Indian tobacco, seed; Iva; Jalap; Jamaica dogwood, bark; Juniper berry; Kaffir lime, leaf; Kewra; Kokam; Linden, leaf; Lovage, seed; Mace; Magnolia, bark; Mahaleb; Malabar cardamom; Malabar-tamarind; Malabathrum; Mastic; Micromeria, white; Milk thistle; Mioga; Miracle fruit; Mistletoe;</p>	<p>0.5-2.0</p> <p>Use 1-2 lb for control of Spodoptera spp.</p>

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GREENHOUSE/SHADEHOUSE AND OUTDOOR NURSERY	Application rate (pounds/acre)
<p>Mojave yucca; Muira puama; black Mustard; vrown Mustard; Mustard, seed; white Mustard; Myrrh; bisabol Myrrh; anise Myrtle; Myrtle, leaf; lemon Myrtle; bush Nasturtium, pods; garden Nasturtium, pods; Nasturtium, pods; stinging Nettle, seed; Nutmeg; Osha; black Pepper; Indian long Pepper; Javanese long Pepper; Pepper, leaf; pink Pepper; Pepper; white Pepper, berry; Pepperbush, berry; Pepperbush, leaf; green Peppercorn; Peppertree; Perilla, seed; Phellodendron; maritime Pine; Poppy, seed; Chinese Prickly ash; Southern Prickly ash, bark; Pygeum; Qing hua jiao; Quassia, bark; Quebracho, bark; Quillaja; Quinine; Rauwolfia, bark; Resin spurge; Rue; Saffron crocus; Sandalwood, seed; Sassafras, bark; Sassafras, leaf; red Saunders; Saw palmetto; Sesame, seed; Silktree, bark; Simaruba, bark; Skunk cabbage, root; Slippery elm; Stemona, root; Suma; fragrant Sumac; smooth Sumac, leaf; Taheebo, bark; Tamarind, seed; Tasmanian pepper, berry; Tasmanian pepper, leaf; Threeleaf caper; Tsaoko; Vanilla; Wattleseed; White willow; Willow; Witch hazel; Yaw root; Yellow gentian, roots; Yohimbe; Cultivars, varieties, and hybrids of these commodities.</p>	
Hemp[*]	<p>0.5-2.0</p> <p>Use 1-2 lbs/Acre for control of <i>Spodoptera</i> spp. and <i>Helicoverpa</i> spp.</p>
Artichoke[*]	<p>0.5-2.0</p>
Flowers, bedding plants and Ornamentals[*]	<p>0.5-2.0</p> <p>For best results, use a ground applicator, a minimum of 50 gallons total mix per acre, 50-100 psi and 3-7 nozzles per bed</p>
Watercress[*]	<p>0.5-2.0</p> <p>Do not apply to flooded fields.</p>

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Crops	Application rate (pounds/acre)
FIELD CROPS	
Almonds[*]	0.5-2.0
Hemp[*]	0.5-2.0 Use 1-2 lbs/Acre for control of <i>Spodoptera</i> spp. and <i>Helicoverpa</i> spp.
Turf[*]	0.5-2.0
Vegetable, cucurbit (Crop Group 9)[*] Including: Chayote (fruit); Chayote waxgourd (Chinese preserving melon); citron melon; cucumber; gherkin; gourd, edible (includes hyotan, cucuzza, hechima, Chinese okra); <i>Momordica</i> spp (includes balsam apple, balsam pear, bittermelon, Chinese cucumber); muskmelon (includes true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon and snake melon); pumpkin; summer squash (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini); winter squash (includes butternut squash, calabaza, hubbard squash, acorn squash, spaghetti squash); watermelon.	0.5-2.0 Use 1-2 lb/Acre for control of <i>Spodoptera</i> spp.
Berry and small fruit group (Crop Group 13-07)[*] Including: Amur river grape; aronia berry; bayberry; bearberry; bilberry; blackberry (including Andean blackberry, arctic blackberry, bingleberry, black satin berry, boysenberry, brombeere, California blackberry, Chesterberry, Cherokee blackberry, Cheyenne blackberry, common blackberry, coryberry, darrowberry, dewberry, Dirksen thornless berry, evergreeb blackberry, Himalayaberry, hullberry, lavacabery, loganberry, lowberry, Lucretiaberry, mammoth blackberry, marionberry, mora, mures deronce, nectaberry, Northern dewberry, olallieberry, Oregon evergreen berry, phenomenalberry, rangeberry, ravenberry, rossberry, Shawnee blackberry, Southern dewberry, tayberry, youngberry, zarzamora, and cultivars, varieties and/or hybrid of these);	0.5-2.0 For armyworm (<i>Spodoptera</i> spp.) and cutworm (e.g. <i>Agrotis ipsilon</i>), use the higher rate range. Ensure good coverage for optimal control

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Crops	Application rate (pounds/acre)
FIELD CROPS	
highbush blueberry; lowbush blueberry; buffalo currant; buffaloberry; che; Chilean guava; chokeberry; cloudberry; cranberry**; highbush cranberry**; black currant; red currant; elderberry; European barberry, gooseberry; grape; edible honeysuckle; huckleberry; jostaberry; Juneberry (Saskatoon berry); fuzzy kiwifruit; hardy kiwifruit; lingonberry; maypop; mountain pepper berries; mulberry; muntries; native currant; partridgeberry; phalsa; pincherry; black raspberry red raspberry; riberry; salal; schisandra berry; sea buckthorn; serviceberry; strawberry; wild raspberry; cultivars, varieties, and/or hybrid of these.	

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Conversion table for the preparation of Small Spray Volumes:

<u>If Rate is</u>	Use This Amount
	<u>Per Gallon (wt)</u>
¼ lb/Acre or 100 gals (wt.)	½ tsp (0.04 oz)
½ lb/Acre or 100 gals (wt.)	1 tsp (0.08 oz)
1 lb/Acre or 100 gals (wt.)	2 tsps (0.16 oz)
2 lb/Acre or 100 gals (wt.)	4 tsps (0.32 oz)

WARRANTY

Read the entire Directions for Use, Conditions of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once. By using this product, user or buyer accepts the following Conditions, Disclaimer of

Warranties and Limitations of Liability. To the extent consistent with applicable law, seller makes no warranty, express or implied, of merchantability, fitness or otherwise concerning the use of this product other than as indicated on the label. To the extent consistent with applicable law, user assumes all risks of use, storage or handling not in accordance with accompanying directions.

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